

<Parameter>

<Name>Type</Name>

<Value>Hub</Value>

</Parameter>

5 </ID>

To complete the example, the preceding ID is equivalent to the following logical expression:

Vendor ID = Brocade Communications, Inc. AND (Type = Switch OR Type = Hub).

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#### *Control Characters*

Defined control characters are allowed in the rules file and cause specific actions to occur depending on the control character. The following is a list of the control characters provided in one embodiment:

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CONTROL\_CHARACTER: "!"

DEFAULT\_CHARACTER: "?"

WILDCARD\_CHARACTER: "\*"

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CONTROL\_CHARACTER: "!" – occurs before any other control type character. This is the main control character, which informs the software that another control type character exists.

DEFAULT\_CHARACTER: "?" – the default character allows having a parameter match if the device for which a rule is to be identified contains a value for the parameter. For example, the following parameter can be present in the ID section of a rule:

<Parameter>

<Name>Management Telnet Address</Name>

<Value>!</Value>

5 </Parameter>.

This indicates that if the device has a value for the attribute (parameter) Management Telnet Address, then this parameter is a match. Of course, all parameters must match for a complete ID match and thus a rule match.

10 WILDCARD\_CHARACTER: "\*" – the wildcard character is used to allow any value to be valid in a specific character of a parameter string. If there is more than one character in a string that can contain any value to be valid, then there are multiple wildcard characters in the Value string. For example, the following parameter:

15 <Parameter>

<Name>Model</Name>

<Value>Silkworm 1!\*\*\*</Value>

</Parameter>.

20 indicates that to match the Model attribute (parameter), a Value string of Silkworm 1000-1999 will be accepted. Any number of control characters can be contained in the wildcard character for a parameter value. However, in order for the wildcard character to work, it should contain at

least one control character. For example, "Silkworm 1\*\*\*\*" would not work properly. It would only work if the device's model number where the string "Silkworm 1\*\*\*\*" which is not what we would expect (1000-1999). The following example further illustrates this point:

<Parameter>

5       <Name>Model</Name>

          <Value>Silkworm 1!\*5\*</Value>

          </Parameter>.

10       The above example will accept any value in the 11<sup>th</sup> and 13<sup>th</sup> characters of the string. Only 1 control character is necessary in the string even though the wildcard flags are separated. Although not necessary, a control character can be put before each wildcard character. The placement of the control character is also not important – it could be contained anywhere in the string. "!"Silkworm 1\*\*\*\*" would work just the same as the above example.

### 15       *Management Information Section*

Any particular rule can have one or more management information sections. Each management information section describes a particular management method for the device. In one embodiment, there are four possible management information types depicted below:

1. Telnet
- 20    2. URL
3. Application
4. SNMP.